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November 12, 2019

Marlene H. Dortch
Secretary, Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Expanding Flexible Use of the 3.7 to 4.2 GHz Band, GN Docket No. 18-122

Dear Ms. Dortch:

On November 7, 2019, Bill Stone, Scott Townley, Ratul Guha, Philip Junker, Greg Romano, and the undersigned, representing Verizon, met via teleconference with the following staff from the Office of Engineering and Technology, the Wireless Telecommunications Bureau, and the Office of Economics and Analytics: Julie Knapp, Kenneth Baker, Michael Ha, Matthew Pearl, Paul Powell, Janet Young, Bob Pavlak, Jonathan Campbell, Susannah Larson, Peter Daronco, Kamran Etemad, Patrick DeGraba, Bahman Badipour, and Tom Derenge.

During the discussion, we explained aspects of Verizon's technical proposal, as detailed in the attached presentation, to protect operations of incumbent earth stations in a re-purposed C-Band. We urged the Commission to adopt power and OOB limits consistent with 3GPP standards for Band n77 (3.3-4.2 GHz), which would allow the U.S. to benefit from global standards and products without unnecessary delay. We reiterated our support for adopting a receiver protection threshold of -128 dBm/MHz to protect earth stations rather than imposing across-the-board restrictive power levels and OOB limits on all 5G transmitters. Such an approach, we explained, would shift the responsibility of interference management away from static and overly-restrictive limits on base station/end-user equipment and onto 5G operators that can use dynamic and flexible network management techniques to locally modify network operations to protect earth stations. And in the rare instance when an earth station experiences harmful interference, Verizon explained how to measure the receiver protection threshold at an earth station receiver¹ and quickly remediate interference.

We also noted that the Commission followed a similar approach when it adopted rules to protect Broadcast Auxiliary Services ("BAS") and Cable Television Radio Services ("CARS") in the 205-2110 MHz band from adjacent-channel AWS-1 services at 2110-2155 MHz. Rather than imposing stringent power levels and OOB limits on all AWS-1 operations, the Commission adopted its standard power levels and OOB limits and placed an additional requirement on all AWS-1 licensees to protect previously licensed BAS and CARS operations.²

¹ The thermal noise floor is typically taken as -114 dBm/MHz using a passive device at room temperature. Our example measurement system uses an active device to achieve a thermal noise floor of -118.2 dBm/MHz.

² See 47 C.F.R. § 27.1133 "Protection of part 74 and part 78 operations. AWS operators must protect previously licensed Broadcast Auxiliary Service (BAS) or Cable Television Radio Service (CARS) operations in the adjacent

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Finally, we explained that synchronizing CBRS and C-Band operations would resolve co-existence issues at the band edge. Synchronization is supported by vendors and operators complying with CBRS Alliance specifications. The procedure follows traditional 3GPP synchronization methods based on an absolute timing reference. When User Equipment (“UE”) for CBRS and C-Band operations are expected to come in proximity, network synchronization would avoid receiver desensitization. In other cases, synchronization may not be needed when there is sufficient isolation between CBRS and C-Band operations.

This letter is being filed pursuant to Section 1.1206 of the Commission’s Rules. Should you have any questions, please contact the undersigned.

Sincerely,

/s/ Patrick Welsh

Attachment

cc: Julie Knapp
Kenneth Baker
Michael Ha
Matthew Pearl
Paul Powell
Janet Young
Bob Pavlak
Jonathan Campbell
Susannah Larson
Peter Daronco
Kamran Etemad
Patrick DeGraba
Bahman Badipour
Tom Derenge

2025-2110 MHz band. In satisfying this requirement AWS licensees must, before constructing and operating any base or fixed station, determine the location and licensee of all BAS or CARS stations authorized in their area of operation, and coordinate their planned stations with those licensees. In the event that mutually satisfactory coordination agreements cannot be reached, licensees may seek the assistance of the Commission, and the Commission may, at its discretion, impose requirements on one or both parties.”